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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/509,884	10/04/2004	Claudine Lalanne-Magne	01435.0193	9757

22852 7590 11/21/2007
FINNEGAN, HENDERSON, FARABOW, GARRETT & DUNNER
LLP
901 NEW YORK AVENUE, NW
WASHINGTON, DC 20001-4413

EXAMINER

BULLOCK, IN SUK C

ART UNIT	PAPER NUMBER
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1797

MAIL DATE	DELIVERY MODE
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11/21/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/509,884	Applicant(s) LALANNE-MAGNE ET AL.	
	Examiner In Suk Bullock	Art Unit 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 September 2007.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-13 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

A reply to the Office Action mailed 6/27/2007 is acknowledged. No amendment was filed with the reply. Thus, original claims 1-13 remain pending in this present application.

The following rejection is maintained.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was

not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 1-13 are rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent 5,990,251 to Gelus.

Gelus discloses a process for (co-)polymerization of one or more olefins (ethylene or ethylene with at least one C₃-C₈ olefin) in a fluidized bed reactor using a titanium-based catalyst of Ziegler-Natta type and an organoaluminum cocatalyst and a halogenated compound (col. 1, lines 12-15; col. 2, lines 13-15; col. 2, lines 57-59; and co. 4, lines 41-46). The halogenated hydrocarbon may be a chlorinated hydrocarbon. It may be a monohalogenated hydrocarbon, e.g. corresponding to the general formula R-X in which R denotes an alkyl group containing from 1 to 4 carbon atoms. See col. 2, lines 21-25. The halogenated hydrocarbon compound is introduced into the polymerization medium preferably diluted in a liquid hydrocarbon such as an alkane, e.g. pentane (col. 2, lines 38-41). The catalyst contains essentially atoms of titanium, halogen and magnesium and optionally a refractory oxide, e.g., silica (col. 4, lines 5-15). The molar ratio of the halogenated hydrocarbon compound to the total quantity of cocatalyst introduced into the polymerization medium is comprised between 0.001 and 0.5 (col. 3, lines 55-59). The cocatalyst and the halogenated hydrocarbon compound are introduced at a substantially constant value selected (col. 3, lines 61-67). The molar ratio of quantity of the organoaluminum cocatalyst to the quantity of titanium introduced into the polymerization medium is comprised between 0.5 and 100 (col. 4, lines 47-52).

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Gelus, also, discloses that when the molar ratio of the quantity of the halogenated hydrocarbon compound to the quantity of titanium introduced into the polymerization medium is too high, it is found that the activity of the catalyst is not appreciably modified, or even is substantially reduced. When this ratio is too low, no substantial modification in the catalyst activity is found compared with a process carried out in the absence of halogenated hydrocarbon compound. See col. 3, lines 46-54.

The difference between Gelus and the claimed invention is that the molar ratio ranges disclosed by Gelus overlap with the claimed molar ratio ranges.

However, overlapping ranges have been held to be prima facie evidence of obviousness. It would have been obvious to one having ordinary skill in the art to have selected the portion of Gelus' molar ratio ranges that correspond to the claimed ranges. *In re Malagari*, 182 USPQ 549 (CCPA 1974).

It is noted that Gelus does not explicitly disclose wherein the monohalogenated hydrocarbon compound is n-butyl chloride. However, the disclosure by Gelus of monohalogenated hydrocarbon corresponding to the general formula R-X in which R denotes an alkyl group containing from 1 to 4 carbon atoms (col. 2, lines 21-25) includes n-butyl chloride. It would have been obvious to one having ordinary skill in the art at the time the invention was made to have selected any one of the monohalogenated hydrocarbon compounds disclosed by Gelus, including n-butyl chloride, because it would have been expected that they would be equally effective.

Response to Arguments

Applicants' arguments filed 9/27/2007 have been fully considered but they are not persuasive.

Applicants argue that the selection of both n-butyl chloride and the claimed ratio of n-butyl chloride to Ti in the range of 0.1 to 40 is not obvious "especially in view of the preference in Gelus for a much lower ratio of chlorinated hydrocarbon to catalyst and the explicit teaching away from increased ratios in the Examples. As noted in M.P.E.P. §2144.05III, a prima facie case of obviousness may be rebutted by showing 'that the art, in any material respect, teaches away from the claimed invention.'" The argument is not persuasive because it has been held, "A reference may be relied upon for all that it would have reasonably suggested to one having ordinary skill in the art, including nonpreferred embodiments." *Merck & Co. V. Biocraft Laboratories*, 874 F.2d 804, 10 USPQ2d 1843 (Fed. Cir.), cert. Denied, 493 U.S. 975 (1989). See MPEP 2123. As noted by Applicants, Gelus discloses a general formula R-X which would include n-butyl chloride. Notwithstanding all the examples in Gelus uses chloroform as the halogenated hydrocarbon, the reference would have reasonably suggested to one having ordinary skill in that n-butyl chloride would be as equally effective as chloroform. The teachings of the reference are not limited to the examples but the reference as a whole.

With regard to the ratio of n-butyl chloride to Ti, a reference is not limited to its preferred embodiments but for all that it would have reasonably suggested to one having ordinary skill in the art. Gelus discloses a molar ratio of halogenated

hydrocarbon to Ti in the range between 0.001 and 0.15. This disclosed range overlaps with the claimed range. Overlapping ranges have been held to be prima facie evidence of obviousness. In re Malagari, 182 USPQ 549 (CCPA 1974).

In conclusion, taking the teachings of Gelus as a whole, the reference would have reasonably suggested to one having ordinary skill in the art to have selected n-butyl chloride and a molar ratio of up to 0.15 (halogenated hydrocarbon to Ti) with a reasonable expectation of success because Gelus has disclosed monohalogenated hydrocarbon which encompasses n-butyl chloride and a molar ratio of up to 0.15 which overlaps with the claimed range. Applicants have not presented any evidence to show that the claimed range is critical by way of unexpected results relative to the range in Gelus using specifically n-butyl chloride as a monohalogenated hydrocarbon.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

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the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to In Suk Bullock whose telephone number is 571-272-5954. The examiner can normally be reached on Monday - Friday 6:00-2:30.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.


I.B.


Glenn Caldarola
Supervisory Patent Examiner
Technology Center 1700